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ABSTRACT

This bulletin provides information on the issues surrounding urban sprawl. It is designed to offer information on the dimensions of sprawl and related policy debates. Some of the major debates include whether or not sprawl is a problem that even needs to be addressed. A summary of the major points of debated topics is included. (Contains 20 references.) (CCM)

Losing Ground?
Part 1:
The Dimensions of Urban Sprawl

Feb 15, 2000

THE ACADEMY OF NATURAL SCIENCES

Know *Your* Environment

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Losing Ground?

Part 1: The Dimensions of Urban Sprawl

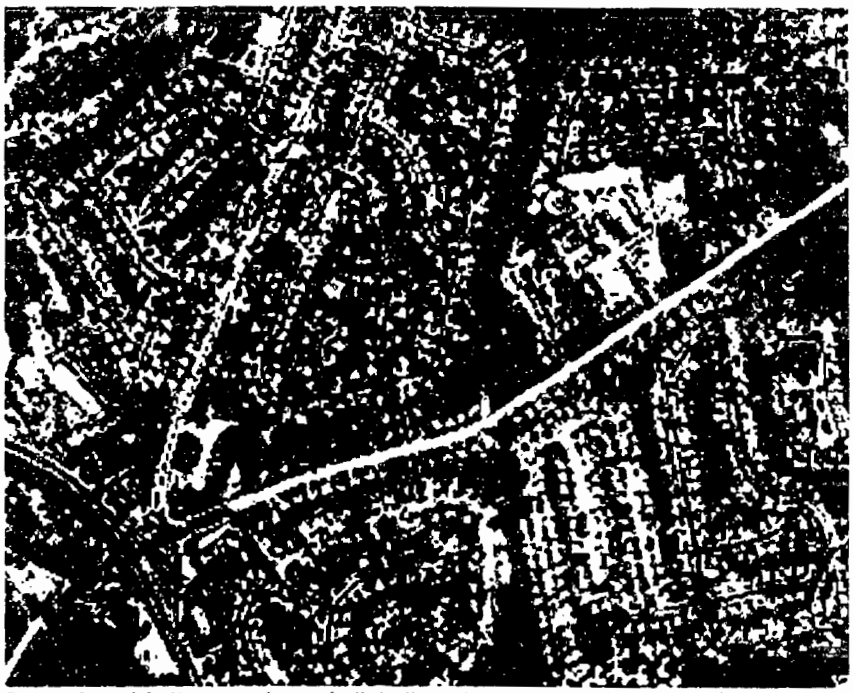
In our next two issues, Know Your Environment will be examining the consequences of land development and urban sprawl. We begin with a discussion of the dimensions of sprawl and some of the related policy debates. Next month will focus on the specific impacts of sprawl on biodiversity and wildlife conservation.

Sprawl - What Is It?

There are numerous definitions of the process known as urban sprawl. They range from the technical ("residential development at a density of three dwelling units per acre or less",)[1] to the descriptive ("dispersed development ...along highways and in rural countryside.")[2] Some writers even suggests that sprawl, like art--or obscenity, depending on one's perspective--is impossible to define but is known when one sees it.

Most commonly, though, urban sprawl refers to a general movement of people, residences and businesses away from population centers into outlying regions, transforming large areas of landscape. Sprawl is usually evaluated by looking at rates of land development.

The most recent example of this was the U.S. Dept. of Agriculture's 1999 National Resource Inventory (NRI). The NRI reported that between 1992 and 1997 over 16 million acres of forest and farmland were converted to residential or commercial uses. This represents a rate of development twice that of the previous decade.[3]



Sprawl: a bird's eye view. A digitally enhanced aerial photo of New Castle County, Delaware vividly demonstrates how roads and houses (white) can divide up features of the landscape.

The issue can also be approached on a local scale. Sprawl is often thought to be occurring when land development in an area outpaces population growth. Some examples:

>>From 1970 to 1990, the population of the New York metropolitan area grew only 5 percent, but land use increased by 61 percent.

>>Similarly, in the same time period Chicago's 4 percent population increase saw a 46 percent rise in the use of land.

>>In Cleveland, where the population actually declined by 11 percent, there was still 33% more land developed.

And critics note that Phoenix, one of the fastest growing cities in the country, is moving into the desert at a rate of 1 acre per hour (prompting the comment: "the only thing stopping Phoenix is Tucson.")[4]

Is it "Smart Growth? Or "No Growth?" The debate goes on.

Whatever the precise definition of sprawl, there appears to be a growing sentiment in this country that something is amiss in the pattern of land use. Both the polls and a variety of local ballot initiatives (200 of which in 1998 committed a total of over seven billion dollars to preserving open spaces), seem to indicate that Americans are becoming increasingly concerned with the impact of sprawl.

As the Christian Science Monitor noted in December of 1999, the "...sign for unchecked development may soon be replaced by another : 'Wrong Way - Go Back.'"[5]

Sprawl - The Problems

The problems most often associated with sprawl are common knowledge to people living within it. Anthony Downs of Brookings Institute summarizes them to include: "...traffic congestion, air pollution, large-scale absorption of open space, extensive use of energy...inability to provide adequate infrastructure to accomodate growth because of high costs...and suburban labor shortages..."[6]

Downs also points out that a second tier of problems associated with sprawl includes the high crime rates, poor schools and low quality public services typical of many inner cities and "inner ring" suburbs: "These problems arise because urban sprawl concentrates poor households, especially poor minority households, in certain high poverty neighborhoods."

Such issues are neither new nor limited to the U.S. In China, for example, from 1950 to 1990 over 85 million acres of farm land were converted to residential use. In America, sprawl--in some form--has been a public concern since at least the 1920s.

What distinguishes the current state of sprawl, however, is both the unprecedented amount of land being used and the tendency for unplanned development to move into newer and more distant locations.

Patricia Burgess of Cleveland State University writes that sprawl, in its current form, is caused by a roughly constant numbers of people dispersing across ever broader areas.

"If residents or business relocate from one community to its neighbor, there is no net gain to the region, only a shift. And our metropolitan regions expand even when they do not grow."[7]

The problems of sprawl are thus moved to areas that were previously unaffected.

This was echoed in a Vice Presidential press release that accompanied the recent NRI report. Land transformation, it stated, "...is no longer centered predominantly around major metropolitan areas, but is affecting growing numbers of small- and mid-sized cities in virtually every part of the country."[8]

The Ford Foundation also noted in a recent article that the indirect impact of sprawl is no longer limited to inner cities. "Older suburbs, too, are rapidly losing ground as a kind of centrifugal force--fed by decades of government policies favoring the construction of highways and new housing--throws jobs and businesses and prospering families even farther from urban centers."[9]

Sprawl? - No Problem

Yet, not everyone sees sprawl in a negative light. "One person's sprawl is another's American dream," advocates of unregulated growth are fond of saying.

Writing in *Time*, Richard LaCayo summarizes the problem. "Limiting growth also means dealing with a profound conflict between the good of the community and the rights of the individual. For a lot of people, the good life still means a big house on a big yard. Who's to say they shouldn't get it?"[10]

Downs, a critic of sprawl, acknowledges that "...sprawl produces many benefits to large numbers of metropolitan citizens." These include "...low density residential lifestyles...easy access to open space...a broad choice of places to work and live, ease of movement...and ability to exercise strong influence on their local governments."

In the view of some writers, the patterns of growth in America have few of the sorts of consequences that critics ascribe to them. In commenting on the growth rate of Phoenix, Robert Franciosi of the Goldwater Institute reassures readers, "At the rate of an acre-an-hour, it would take 340 years to fill up all the vacant land in Maricopa County."

He goes on to suggest that "...that despite the worry about growth destroying the quality of life in the Valley, there is no reason for panic. There is still a lot of open space, and traffic and air quality have not deteriorated significantly."[11]

Some go so far as to condemn the use of the term "sprawl" altogether, claiming that its negative connotations misrepresent development that is merely a result of prosperity. Writing for PERC Reports, a publication favoring free-market environmentalism, Randall G. Holcombe says "The term 'urban sprawl' has a bad ring to it. The name reinforces the view that metropolitan growth is ugly, inefficient, and the cause of traffic congestion and environmental harm."[12]

The Dividing Lines

For those who argue that sprawl is not a problem, there is particular animosity towards the new movement known as Smart Growth.

Like sprawl, Smart Growth has many meanings. Its supporters--businesses, civic and environmental groups, professional planners, and even a candidate for the U.S. Presidency--contend that Smart Growth is a combination of public policies and development practices that allow economic growth to continue while limiting the environmental, social and economic disruptions caused by sprawl.

Researchers at the Northeast-Midwest Institute describe Smart Growth as "a view that metropolitan growth patterns can and should serve the environment, the economy, and the community equally."[13]

But other writers take a more negative view of Smart Growth. According to Wendell Cox, a consultant for the Heritage Foundation and a frequent opponent of public transit, "Smart Growth means no growth." Cox describes his views as "not pro-sprawl, but pro-choice."[14]

Randal O'Toole, writing in the January 1999 issue of REASON On-Line offers a critique of Smart Growth, based on his analysis of conditions in Portland Ore, a city that has been practicing growth management for 25 years. Denying that planning can have a positive role in shaping land use, he maintains that there is a "congestion coalition" of "planners, environmentalists, federal bureaucrats, central city officials, downtown businesses, and construction companies," using a fabricated concept of sprawl to advance their own agendas.[15]

For advocates of Smart Growth, however, Portland--the target of O'Toole's disapproval--is a prototype to be studied and emulated. Rep. Earl Blumenauer (D-Ore) writes:

Two Tales of a City?

"Portland's effort to concentrate development inside an 'urban growth boundary' has driven up housing prices and increased congestion, reducing air quality and lengthening commuting times."

Joseph L. Bast, *Heartland Report*

"The fact is Portland is thriving because it is livable. People value quality of life and enjoy living where farms, forests and wildlife are protected....What we have done in Portland is give people choices.

Rep. Earl Blumenauer (D-Ore)

Figure 1: A summary of the major points in the debate on sprawl

Critiques Of Sprawl (Often joined under the label "Smart Growth"):

1. Sprawl is an unsustainable pattern of development, driven by unwise government policies and "warping" of markets.
2. Sprawl could be controlled by sound planning.
3. Sprawl is enmeshed with a dependence on automobile transportation, leading to greater pollution, a need for extensive highways and greater social isolation.
4. Sprawl is one of the factors contributing to the economic and social decline of inner cities.
5. Sprawl consumes open space, farmland and wild areas, endangering traditional farming communities and contributing to the wildlife extinction.
6. Sprawl has significant economic costs that are not paid for by the parties benefiting from the growth.
7. Sprawl leads to a breakdown in community and civic interactions..

Critiques of attempts to control sprawl (Often joined under the labels of "Property Rights" or "free choice.")

1. "Sprawl" is a mistaken term used to criticize low density development which is the natural results of free market choices by property owners.
2. Property owners should not be limited in their development decisions and any attempts to control land use will result in negative consequences.
3. Criticisms of automobile use are exaggerated. It is safer and more cost effective than public transit.
4. Inner city decline is the result of government intervention and social issues, and should be resolved by market forces.
5. There is still plenty of open space and farmland. The negative aspects of low-density growth have been exaggerated by opponents.
6. The external costs of low density growth have been miscalculated and mis-stated by critics.
7. New patterns and forms of community and civic interaction are developing in low density settings.

"The fact is Portland is thriving because it is livable. People value quality of life and enjoy living where farms, forests and wildlife are protected. Portland's urban growth boundary protects these resources...This is not social engineering. What we have done in Portland is give people choices. You don't have to burn a gallon of gas to buy a quart of milk. You can drive, but you can also walk or bike."[16]

Looking at these arguments, (some of which are summarized in Figure 1) it is difficult to understand how opinions could differ so sharply on an issue as obvious as, literally, the state of one's own backyard. The answer may lie in just that fact--that sprawl as an issue is hard to view past the distance of personal experience.

For a resident of Arizona, waking up each morning to a broad, unbroken horizon, it is hard to see how sprawl could ever be a problem. For residents of the East Coast who suffer long commutes through congested traffic, watching construction eat up acre after acre of the last remaining open space in sight, it is hard to understand how it couldn't be.

There is also no avoiding the pronounced ideological slant to these arguments. Opponents of smart growth tend to have an uncompromising belief in property rights and in free market solutions to social problems. Smart growth advocates, while coming from a greater variety of ideological roots, tend to believe in the use of social and political mechanisms to guide markets.

For the critics of Smart Growth, even if there are undesirable features to growth, these patterns represent the clear choice of most Americans. Sprawl, they believe, is a logical product of a free market economy, and, if adjustments are needed, the market will handle it.

"The best prescription for the central cities," O'Toole recommends, "is to let them depopulate as people move out to the suburbs. As their densities fall, they will become more attractive places to live."

In Holcombe's words: "...the invisible hand of the market guides property owners to develop their property in ways that result, over time, in efficient land use patterns." In general, pro-growth advocates reject any interference with market forces, in some cases advocating privatizing roads and doing away with environmental regulation.

Smart Growth advocates counter that development patterns in this country have never reflected true market considerations. "In fact," writes Edward T. McMahon in the Planning Commissioners Journal, "sprawl is the result of numerous free-market warping policies. Highway construction, mortgage policies, flood plain insurance, fragmented property tax systems, and favorable tax treatment of house sales and mortgage interest all shape the 'market' to encour-

In Their Own Words

"The best prescription for the central cities is to let them depopulate as people move out to the suburbs. As their densities fall, they will become more attractive places to live."

Randal O'Toole, *REASON On-Line*

"We're the only nation on earth that does this to our cities. A lot of these suburbs are more than 40 years old, and they're showing signs of deterioration. Rather than tend to the problems, it seems easier to just leave them. But we're the only country without a concerted policy to help these areas change their form and function over time."

Melvin L. Oliver, Vice President for Asset Building and Community Development, Ford Foundation

"...the invisible hand of the market guides property owners to develop their property in ways that result, over time, in efficient land use patterns."

Randall G. Holcombe, *PERC Reports*

"...we can stick our heads in the sand and pretend that growth will simply not happen. Likewise, we could pretend that when we DO grow it somehow will not affect us: it will not alter our landscape, it will not pollute our environment, it will not raise our taxes, and it will not change our quality of life. Or, we can plan for growth the best way we know how..."

Gov. Parris Glendening (D-MD)

age sprawl."[17]

In one sense, the supporters of Smart Growth and their opponents have reversed the historical roles of their respective ideologies in this debate.

Advocates of policies which would involve greater social and political intervention, once closely associated with centralized governmental control, now tend to promote a variety of local solutions.

Critics of Smart Growth seem to favor an approach that limits the significance of local and regional variation.

The Future

Regardless of the debates in academic and political spheres, however, urban sprawl is being seen as an important issue by many Americans. From Minneapolis to Austin, Portland to Raleigh, hundreds of localities have been exploring ways of maintaining economic growth while controlling what they see as the more negative elements of sprawl.

Sprawl: Getting the Big Picture

A growing body of researchers, planners and policy analysts are making use of advanced technology to read the changing face of America's landscape.

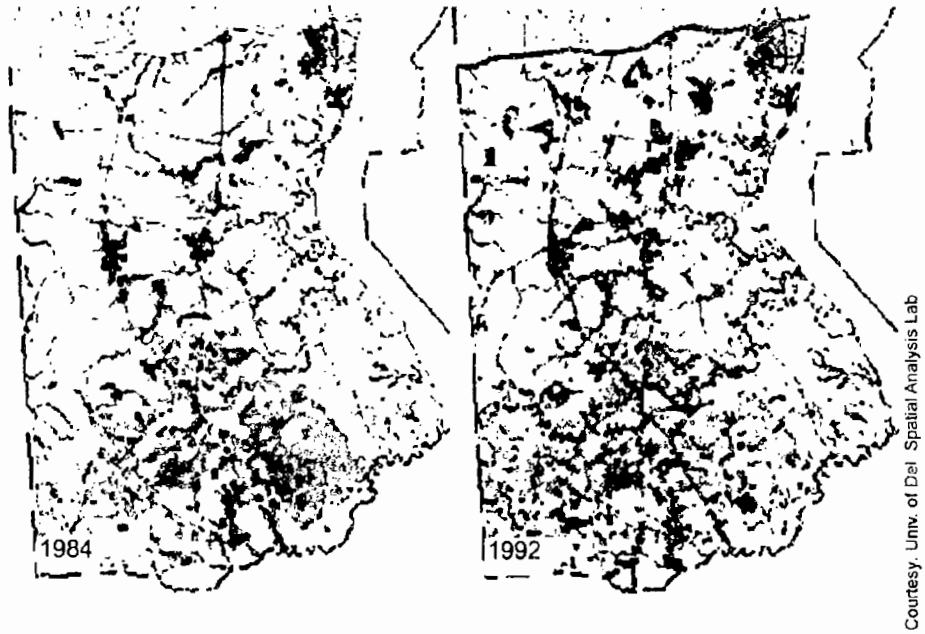
According to *civic.com*, a newsletter for technology professionals in government, "communities are rallying around 'smart growth' policies that attempt to balance community life and economic development. Increasingly, those plans involve information technologies--including geographic information systems (GIS), graphic modeling software and land-use systems--that use population and demographic databases to project growth scenarios."

Geographic Information Systems--the centerpieces of such strategies--are computer programs that take multiple dimensions of data about an area of land and use it for analysis and predictions. These can then be translated into tables and color coded maps that graphically depict information about a landscape.

For example, the U.S. Geological Survey has been using a variety of data sources to chart the growth of metropolitan regions in this country. GIS's can integrate historical maps, satellite images and other geographic information to show how an area changes over time. The analysis can include data like the topography, watersheds, and rainfall of a region, information that "...sets the stage on which the urban story unfolds."

The use of technology to study sprawl has become particularly popular among those trying to slow down the growth of metropolitan regions. "The Sierra Club...also has become a proponent of GIS after realizing that a map can be worth a thousand words," according to *civic.com*. "Environmental lobbyists are urging state and local governments to map future urban growth electronically..."

With information technologies expanding in both availability and sophistication, there is little doubt that they will play a major role in future debates over land use. While they will certainly not bridge the ideological divides between participants in such debates, they should help fill the information gaps that contribute to the controversies.



Courtesy, Univ. of Del. Spatial Analysis Lab

Pictures worth a thousand words: Side-by-side maps of southern New Castle County, Delaware, produced using GIS technology to compare land use data from 1984 to 1992. Note the increase in the number of darker areas on the 1992 map, indicating a transformation of land to residential and commercial use.

One of the leaders in this has been the government of the state of Maryland. Planners there recently estimated that, at current rates, the state would use as much land in the next quarter century as it had in its entire previous history. In light of that, it is not surprising that Maryland Governor Parris Glendening has become a major advocate of Smart Growth.

Glendening states "...we can stick our heads in the sand and pretend that growth will simply not happen. Likewise, we could pretend that when we DO grow it somehow will not affect us: it will not alter our landscape, it will not pollute our environment, it will not raise our taxes, and it will not change our quality of life. Or, we can plan for growth the best way we know how..."[18]

Maryland believes it is following the latter course by developing three goals to guide future development in the state:

"--to save...valuable remaining natural resources before they are forever lost;

--to support existing communities and neighborhoods by targeting state resources to support development in areas where the infrastructure is already in place or planned to support it;

--to save taxpayers millions of dollars in the unnecessary cost of building the infrastructure required to support sprawl".

In some respects these goals provide an overview of smart growth principles--recognizing sprawl as an environmental issue with potentially irreversible consequences; preventing sprawl from causing economic and social disruption of existing towns, inner-cities and communities; and addressing both the internal and external costs of maintaining a sprawling style of development, in part through the use and re-use of existing infrastructure.

The tools and tactics used by Maryland and other practitioners of Smart Growth are numerous. They range from conservation easements to development boundaries, brownfield rehabilitation to "no-growth" zones into which the state will not build roads or support development.

Most of these moves are an anathema to the free market philosophies of Smart Growth opponents, but even such bastions of capitalism as the Bank of America have begun to question the current pattern of land use.

"We are all pro-growth," said Bank of America Chairman and CEO Hugh J. McColl Jr., last year addressing a group of developers. "We all depend on development to survive, but we also depend on the sustainable health of the cities in which we do business....The goal is not to limit growth, but to channel it to areas where infrastructure allows growth to be sustained over the long term."[19]

In keeping with these sentiments, the Bank of America has joined with several conservation groups in California--the state ranked sixth by the NRI in terms of land area transformed--to issue a report on the impact of sprawl there. Among the comments made:

"California businesses cannot compete globally when they are burdened with the costs of sprawl...California must find a new development model. We must create more compact and efficient development patterns that accommodate growth, yet help maintain California's environmental balance and its economic competitiveness. And we must encourage everyone in California to propose and create solutions to sprawl."[20]

"We are all pro-growth. We all depend on development to survive, but we also depend on the sustainable health of the cities in which we do business..."

Hugh J. McColl Jr., Chairman and CEO, Bank of America

Benevolent as these objectives may be, however, historical attempts to control sprawl--first to control the growth of cities and then to control the dispersion into the suburbs--do not offer much encouragement. Nor are current attempts to combat the negative effects of sprawl by any means certain.

"It is obvious that continuation of suburban sprawl will surely not solve the serious problems I have described. In fact, it could make them worse," writes Downs. "But it is not theoretically obvious, nor has it been decisively proven in practice, that any of these alternative strategies will largely solve the problems either."

Patricia Burgess recently published a study of actions taken to limit sprawl in the 1920s and 1960s. She attributes their failure to a variety of factors, including the nature of zoning, changes in social priorities, difficulties in planning over a regional area and the powerful manner in which both special interests, and individual self interest, supported the status quo.

Downs concurred that self interest, i.e. the forces of the market, tend to favor sprawl. "Until advocates of limited future sprawl can overcome the metropolitan majority's belief that the benefits of sprawl outweigh its social costs, they are not likely to notably reduce sprawl's dominance."

Nevertheless, both Downs and Burgess suggest that there is a need, and an opportunity, for action

to succeed in the current situation. According to Burgess, "...the overall problem is bigger," compared to sprawl in the 1920s or 1960s, "and the potential negative consequences are greater, affecting more people in more (and more kinds of) places."

Whatever the validity of the arguments over whether or not sprawl is a serious problem, in many locations it is being treated as such. The ideological debate aside, these local actions will be a testing ground for competing concepts.

In this sense, addressing sprawl represents the classical picture of federalism at its best, with states and localities acting as "laboratories" for developing new approaches.

In Portland, for example, an elected regional body, Portland Metro, coordinates development planning. Such regional approaches, have been advocated by many researchers, including Burgess and Downs, but have only shown varying levels of success in the past.

As Blumenauer says, "The Portland model may not be for every community ...Communities need their own vision and must develop tools to achieve that vision."

Given the breadth and range of solutions being proposed to the perceived problems of sprawl, the public and the political system will have ample opportunity to judge each based on outcomes rather than ideology.

Next Issue: The impact of growth on wildlife habitat is often neglected in discussions of urban sprawl. Of all the debates surrounding sprawl, this one probably has the greatest chance of being understood from a scientific perspective. In our next issue, *Know Your Environment* will concentrate on the affects of sprawl on habitat conservation and landscape ecology.

And: Pull onto the information superhighway! Don't forget to drop us a line at rwall@acnatsci.org to be added to our new electronic mailing list.

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Also: The information service Policy.com (http://www.policy.com) posts numerous readings, including some listed above, on a variety of social and political topics.

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